



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,969	04/07/2006	Martin Zehentbauer	P05,0386	2422
26574	7590	03/11/2009		
SCHIEF HARDIN, LLP PATENT DEPARTMENT 6600 SEARS TOWER CHICAGO, IL 60606-6473			EXAMINER BAREFORD, KATHERINE A	
			ART UNIT	PAPER NUMBER
			1792	
			MAIL DATE	DELIVERY MODE
			03/11/2009	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/560,969

**Applicant(s)**

ZEHEBBAUER ET AL.

**Examiner**

Katherine A. Bareford

**Art Unit**

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 11-21 is/are pending in the application.
- 4a) Of the above claim(s) 11-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-893)  
Paper No(s)/Mail Date 12/15/05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. The Response to Restriction Requirement of February 18, 2009 has been received. Claims 1-10 have been previously canceled, and claims 11-21 remain present in the case.

### ***Election/Restrictions***

2. Applicant's election with traverse of Group II, claims 17-21, in the reply filed on February 18, 2009 is acknowledged. The traversal is on the ground(s) that (1) in the PCT examination, no restriction is made and (2) both claims 11, the casing claim, and claims 17/21, methods for producing a casing claims, both contain recitations that the outer surface of the wall bearing a layer that comprises nickel-copper. This is not found persuasive because (1) while the PCT examiner may not have made a restriction between the method and product claims, this does not prevent the national stage Office from making a restriction if it is proper. (2) As to the argument that claims 11 and 17/21 contain a common technical feature of the outer surface of the wall bearing a layer comprises nickel-copper; the Examiner notes that even if this is correct, the Abstract of Japan 03-041485 (cited with applicant's IDS statement of Dec. 15, 2005) indicates that it is known to apply to the outer surface of a wall of a casing for transport of a toner mixture (the developing roller) a layer comprising Ni-Cu (such as Cu-Ni-Cr); and therefore this "common technical feature" is not applicant's contribution and the two groups lack unity of invention. The Examiner notes that the rejection of the claims

as follows under 35 USC 103 also indicates that this would not be applicant's contribution.

The requirement is still deemed proper and is therefore made FINAL.

3. Claims 11-16 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on February 18, 2009.

#### *Specification*

4. The substitute specification filed on December 15, 2005 has been accepted.

#### *Claim Objections*

5. Claim 19 is objected to because of the following informalities: in claim 19, line 3, "hypophosphate" should be corrected to spell "hypophosphite" (as in original claim 11 and the example in the specification, original specification, page 5, for example). As an obvious spelling error is present, the Examiner has treated the claim as requiring "hypophosphite".

Appropriate correction is required.

*Claim Rejections - 35 USC § 112*

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 17-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 17, line 7 and claim 21, lines 6-7, refer to layers comprising "1 to 2 % copper and 8 to 10% phosphor". However, neither the claims nor the specification provide units to measure the percent of materials, such as by weight, by volume, by atomic percent, etc. Because there is no indication as to what units are used, one of ordinary skill in the art would be unable to determine what scope of invention was to be claimed and would not be able to make the invention.

Claim 18, lines 3-4, "a chemical pre-nickeling occurs thereupon" is unclear as to what is intended as to the time of treatment. There is no indication if nickel is required to be applied or whether this simply a chemical treatment prior to the electroless nickel alloy deposition, and if so what treatment it to be used. Because there is no indication as to what treatment occurs, one of ordinary skill in the art would be unable to determine how to make the invention.

The other claims do not cure the defects of the claims from which they depend.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 17-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 17, line 7 and claim 21, lines 6-7, refer to layers comprising "1 to 2 % copper and 8 to 10% phosphor". However, neither the claims nor the specification provide units to measure the percent of materials, such as by weight, by volume, by atomic percent, etc. Because there is no indication as to what units are used, one of ordinary skill in the art would be confused as to what is required. For the purpose of examination, the Examiner will consider that any unit can be used.

Claim 18, lines 2-3, it is unclear how a layer is to be applied by an "etching" process (zincate etching). For the purpose of examination, the Examiner will consider that a zincate coating process is to be used.

Claim 18, lines 3-4, "a chemical pre-nickeling occurs thereupon" is unclear as to what is intended as to the time of treatment and the treatment used. For the purpose of examination, the Examiner will consider that any chemical pretreatment process can be provided after the zincate process and before the electroless plating meets the

requirements of the claim, but applicant should clarify what is required and when the treatment occurs.

Claim 19, line 4, "a chemical nickel-copper-phosphate deposition" should be "said chemical nickel-copper-phosphor deposition" for proper antecedent basis to the treatment of claim 17.

The other dependent claim does not cure the defect of the claim from which it depends.

#### ***Double Patenting***

10. Applicant is advised that should claim 17 be found allowable, claim 21 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

#### ***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 17 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizoguchi et al (US 6178306) in view of Gulla et al (US 4482596).

Claims 17 and 21: Mizoguchi teaches that it is well known to provide a casing (sleeve) for transport of a toner mixture on its outer surface in a development device. Figures 1-2 and column 5, lines 5-30 and column 6, lines 25-35. The casing (sleeve) is formed of a base member (51) with a chemically deposited (by electroless plating) layer (52) on the outer surface. Figure 2 and column 6, lines 25-35. To apply the outer layer the metal casing is chemically pretreated (by a zincate process, for example) and then electrolessly plated with a nickel-phosphorous containing coating. Column 9, lines 35-45. The plating can contain 2-15 wt% phosphorous. Column 9, lines 40-45.



Mizoguchi teaches all the features of these claims except the addition of copper and the specific amount of copper and phosphor used.

However, Gulla teaches providing electroless plating solutions to plate copper/nickel/phosphorus coatings where the alloy can contain 1-99 percent copper by weight and balance nickel and phosphorous. Column 9, lines 10-20, column 12, lines 10-20. The amount of copper and nickel is dependent on the desired amount of each in the alloy deposit. Column 11, lines 40-50. Gulla teaches that the nickel and copper each have there own benefits (column 3, lines 1-15 and column 4, lines 15-20) and that electroless alloy solutions of the two metals would be desirable. Column 4, lines 30-35. Gulla notes that the deposits can be over aluminum substrates previously subjected to a zincate process. Column 23, lines 25-35.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mizoguchi to add copper salt to the electroless plating bath to provide a nickel/copper/phosphorous alloy as taught by Gulla in order to achieve the benefits of using copper in the alloy as Mizoguchi teaches to provide an electrolessly plated Ni-P layer and Gulla teaches that when providing an electrolessly plated Ni-P layer it is desirable to provide an addition of copper to the alloy for the benefits of copper, such as plating large and/or irregularly shaped parts. As to the specific amounts of copper used, it would have been obvious to optimize the amount used to provide the optimum amount of copper for the specific purpose of coating the developer sleeve as Gulla teaches that the amount of copper and nickel is dependent on

the desired amount of each in the alloy deposit, that the amount of copper can be 1-99 wt% and furthermore, as discussed in MPEP 2144.05 (II), "Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955)." As to the amount of phosphor used, Mizoguchi teaches to use 2-15 wt%, which overlaps with the amount claimed, and "In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976)."

14. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mizoguchi in view of Gulla as applied to claims 17 and 21 above, and further in view of Yarkosky et al (US 5141778).

Mizoguchi in view of Gulla teaches all the features of this claim except for the specific pretreatment process. Mizoguchi does teach that the casing (sleeve) substrate can be aluminum. Column 6, lines 45-55.

Yarkosky teaches a desirable pretreating when providing a nickel-phosphorous coating on an aluminum substrate to provide a desirable smooth coating. Column 2, line 65 through column 3, line 5; and column 5, line 65 through column 6, line 15. This

process includes chemically pretreating the substrate (by cleaning, etching, desmutting, for example; column 4, lines 25-55), followed by a zincate process (column 4, line 50 through column 5, line 55), followed by a chemical pre-nickeling (a first layer of nickel with cadmium by electroless plating; column 6, line 55 through column 7, line 10). Then, the final nickel electroless plating bath is used. column 7, lines 1-15.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mizoguchi in view of Gulla to provide the pretreating process with chemical pretreatment, zincating, and chemical pre-nickeling as described by Yarkosky with an expectation of providing a desirably smooth coating, because Mizoguchi in view of Gulla teach providing an electroless coating of a nickel alloy on aluminum with zincating pretreatment and Yarkosky teaches a desirable specific pretreating combination when providing a nickel electroless plating on aluminum substrates treated with zincating.

15. Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizoguchi in view of Gulla as applied to claims 17 and 21 above, and further in view of Das et al (US 5264288).

Mizoguchi in view of Gulla teaches all the features of these claims except for the specific combination of materials in the bath and the pH value and temperature. Gulla does teach that the bath can contain nickel sulfate and copper sulfate as the source of the metal ions. Column 9, lines 20-25. The reducing agent is desirably a hypophosphite,

such as sodium hypophosphite. Column 9, lines 45-55 and column 13, lines 15-20. The bath can contain complexing agents such as citric acid. column 9, lines 35-45. The pH of the bath is desirably between 8 and 11. Column 9, lines 55-60.

Das teaches electroless plating solutions containing metal salts, such as nickel or copper sulfate. Column 1, lines 1-35 and column 4, lines 55-65. The baths can have a sodium hypophosphite reducing agent. Column 5, lines 5-10. The baths can have complexing/buffering agents such as sodium citrate and ammonium chloride. Column 4, line 65 through column 5, line 6. The temperature of the baths can be 25-95 degrees C. Column 5, lines 10-15.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mizoguchi in view of Gulla to provide the combination of nickel sulfate, copper sulfate, sodium hypophosphite, sodium citrate and ammonium chloride in the plating bath as suggested by Das with an expectation of providing a desirable plating bath, because Mizoguchi in view of Gulla teach providing an electroless coating bath that can contain nickel sulfate, copper sulfate, sodium hypophosphite and complexing agents, and Das teaches that desirable complexing agents for electroless coating baths with materials such as nickel sulfate and sodium hypophosphite in the bath include sodium citrate and ammonium chloride. One of ordinary skill in the art would optimize selection of the materials given from the possible materials to be used based on the coating desired. As to the amount of materials used, it would have been obvious to optimize the amount used to provide the

optimum amount of copper and nickel salts for the specific purpose of coating the developer sleeve as Gulla teaches that the amount of copper and nickel is dependent on the desired amount of each in the alloy deposit, that the amount of copper can be 1-99 wt%, with the other materials being optimized from the amount of nickel and copper used, and furthermore, as discussed in MPEP 2144.05 (II), "Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955)." As to the pH used, Gulla teaches to use a pH between 8 and 11, which overlaps with the amount claimed, and "In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976)." As to the temperature used, Das teaches to use between 25 and 95 degrees C, which overlaps with the amount claimed, and "In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976)."

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine A. Bareford whose telephone number is (571) 272-1413. The examiner can normally be reached on M-F(6:00-3:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Katherine A. Bareford/  
Primary Examiner, Art Unit 1792